

VIDEO USER GUIDE

2023 Solar Ultimate Video Training Library

Total Play Time: [50:42:08]



The best way to understand the concepts in this program is to use the videos along with the textbook. The videos contain explanations and commentary from a panel of experts that expand on the concepts in the textbook and help you understand the application of the topics in real-world situations. Whether you're a visual or an auditory learner, watching these videos will enhance your knowledge and understanding.

- Watch the videos sequentially and follow along with the textbook. Stop and review any section that you don't understand.
- Pay special attention to the detailed instructional graphics.
- Work through the questions in your textbook to test your comprehension.

Solar Photovoltaic and Energy Storage Systems

Based on the 2023 NEC®

VIDEO USER GUIDE

Play Time Total 13:36:51



	<u>Play Time</u>	<u>Book Page #</u>
Introduction.....	[0:57:13]	
CHAPTER 4—EQUIPMENT FOR GENERAL USE	[1:09:00]	page 455
Article 445—Generators	[0:31:49]	
Article 450—Transformers.....	[0:21:20]	
Article 480—Stationary Standby Batteries.....	[0:15:21]	
CHAPTER 6 – SPECIAL EQUIPMENT	[4:56:17]	page 515
Article 625—Electric Vehicle Power Transfer System.....	[0:49:07]	
Article 690—Solar Photovoltaic (PV) Systems.....	[3:59:22]	
Article 691—Large-Scale Photovoltaic (PV) Electric Supply Stations	[0:07:48]	
CHAPTER 7 – SPECIAL CONDITIONS.....	[6:34:21]	page 571
Article 702—Optional Standby Systems	[0:40:41]	
Article 705—Interconnected Electric Power Production Sources.....	[4:15:41]	
Article 706—Energy Storage Systems.....	[0:48:18]	
Article 710—Stand-Alone Systems	[0:17:36]	
Article 750—Energy Management Systems	[0:32:05]	

Understanding Electrical Theory

For NEC® Applications



VIDEO USER GUIDE

Play Time Total 23:04:17

	<u>Play Time</u>	<u>Book Page #</u>
Introduction	[0:24:54]	
CHAPTER 1 – ELECTRICAL FUNDAMENTALS	[2:37:58]	page 1
Unit 1 – Atomic Structure	[0:54:44]	
Unit 2 – Electron Theory and Chemical Bonding	[0:42:12]	
Unit 3 – Electrical Circuits and Power Sources	[0:36:21]	
Unit 4 – The Electrical System.....	[0:24:19]	
CHAPTER 2 – USES AND DANGERS OF ELECTRICITY	[2:18:39]	page 33
Unit 5 – Uses of Electricity	[1:04:45]	
Unit 6 - Dangers of Electricity	[1:13:27]	
CHAPTER 3 – MAGNETISM AND ELECTROMAGNETISM	[1:22:20]	page 55
Unit 7 - Basics of Magnetism	[0:24:28]	
Unit 8 – Electromagnetism	[0:30:47]	
Unit 9 - Uses of Electromagnetism	[0:26:07]	
CHAPTER 4 – MATHEMATICS	[0:59:57]	page 71
Unit 10 – Basic Math.....	[0:42:55]	
Unit 11 - Trigonometry	[0:15:54]	
CHAPTER 5 – OHM’S LAW AND WATT’S LAW	[1:01:03]	page 91
Unit 12 – Ohm’s Law	[0:41:29]	
Unit 13 – Watt’s Law.....	[0:19:19]	
CHAPTER 6 – ELECTRICAL CIRCUIT TYPES.....	[1:37:37]	page 107
Unit 14 - Series Circuits	[0:41:22]	
Unit 15 - Parallel Circuits	[0:40:30]	
Unit 16 - Series-Parallel Circuits	[0:14:01]	



CHAPTER 7 – ALTERNATING CURRENT	[3:36:14].....	page 137
Unit 17 - Alternating Current Fundamentals.....	[1:39:07]	
Unit 18 – Inductance.....	[0:30:48]	
Unit 19 – Capacitance	[0:33:14]	
Unit 20 – True Power, Power Factor, and Apparent Power	[0:52:02]	
CHAPTER 8 – MOTORS, GENERATORS, RELAYS, AND TRANSFORMERS	[3:10:08].....	page 177
Unit 21 - Motors	[0:57:20]	
Unit 22 – Generators	[0:34:26]	
Unit 23 – Relays.....	[0:12:42]	
Unit 24 – Transformers.....	[1:25:23]	
CHAPTER 9 – PROTECTIVE DEVICES.....	[4:15:56].....	page 215
Unit 25 – Overcurrent Protection.....	[2:51:48]	
Unit 26 – GFCIs, GFPEs, AFCIs, and SPDs.....	[1:23:08]	
CHAPTER 10 – GENERAL KNOWLEDGE	[1:45:08].....	page 241
Unit 27 – Wire Resistance and Voltage Drop.....	[0:40:28]	
Unit 28 – Multiwire Circuits	[0:47:18]	
Unit 29 – The Formula Wheel	[0:16:26]	

Understanding Electrical Estimating



VIDEO USER GUIDE

Play Time Total 17:10:32

	<u>Play Time</u>	<u>Book Page #</u>
Introduction	[0:07:42]	
CHAPTER 1 – INTRODUCTION TO ESTIMATING	[2:42:38]	page 1
1.1 Introduction to Estimating	[0:01:12]	
1.2 Who Needs an Estimate?	[0:19:23]	
1.3 What is an Estimate?.....	[0:10:25]	
1.4 Estimate Types.....	[0:25:32]	
1.5 Estimates and Design Stages	[0:20:44]	
1.6 Estimating System	[0:18:14]	
1.7 Estimating vs Bidding	[0:07:12]	
1.8 Can I be Competitive?	[0:48:40]	
1.9 The Electrical Market	[0:11:16]	
CHAPTER 2 – QUALITIES OF AN ESTIMATOR	[0:45:04]	page 35
2.1 Introduction	[0:00:29]	
2.2 Personal Qualities of an Estimator.....	[0:10:11]	
2.3 Responsibilities of an Estimator	[0:24:51]	
2.4 Field Experience and Job Skills	[0:09:33]	
CHAPTER 3 – THE ESTIMATING PROCESS	[1:27:54]	page 47
3.1 Introduction	[0:01:35]	
3.2 The Estimating Workspace	[0:09:32]	
3.3 The Estimating Tools	[0:14:06]	
3.4 The Detailed Estimating Method.....	[0:17:59]	
3.5 Estimate Accuracy	[0:16:07]	
3.6 Estimating Techniques.....	[0:28:35]	



Business Management Skills

VIDEO USER GUIDE

Play Time Total 3:21:47



Please note that this video was made by Mike Holt as part of a business management live event. While some of the topics discussed might be covered in the Business Management Skills textbook, it was recorded as an independent video, not relating directly to the textbook, but is a supplement to it.